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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,810	08/08/2001	Sok Joo Lee	049128-5025	9929

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EXAMINER	
SEFER, AHMED N	
ART UNIT	**PAPER NUMBER**
2826	

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/923,810	LEE ET AL.	
	Examiner	Art Unit	
	A. Sefer	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *8-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 15-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on April 01, 2004 has been entered; no new claims have been added.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: There is insufficient antecedent basis for the limitation "the transparent electrode material" recited in claims 16 and 17.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1 and 2 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The limitation "wherein source, drain, and gate conductive lines in direct contact with a transparent electrode" is not disclosed in the specification to enable one skilled in the art to make

and/or use the invention -- the specification describes a transparent electrode in contact with a gate conductive line and a pixel electrode in contact with a drain conductive line; the specification describes neither a transparent electrode in contact with a source conductive line nor a single transparent electrode in contact with a drain conductive line and gate conductive line. Without this information it would take undue experimentation to make and use the claimed invention.

The limitation "wherein the first metal includes an aluminum alloy" is not disclosed in the specification to enable one skilled in the art to make and/or use the invention -- the specification describes gate conductive line including an aluminum-alloy and a source/drain conductive line including a molybdenum-alloy. Without this information it would take undue experimentation to make and use the claimed invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-7, as understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Song et al. ("Song") US PG-Pub 2002/0130324.

Song discloses (see fig. 4 and pars. 0079 and 0111) a liquid crystal display device, wherein source, drain and gate conductive lines are indirect contact with a transparent electrode 62/67, each of the conductive lines comprising a first metal layer having a thickness with the range recited in the claim (as in claim 3) including an aluminum-alloy (as in claim 2) formed from a first metal; and an alloy layer formed from an alloy of the first metal and another metal including molybdenum (as in claim 5) being disposed at an upper portion of the first metal layer.

As for claim 4, Song discloses an alloy layer formed from an alloy including a first metal and a second metal deposited onto the first metal layer.

As to the subsequent removal of the second metal, it refers to a process and "product by process" claims are directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685 and In re Thorpe, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the claims are directed to a device. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

As for claim 6, Song discloses said gate conductive line including one of a gate pad 24, gate line 22 and a gate electrode 26.

As for claim 7, Song discloses said source and drain conductive lines including one of a data line 62/72, a source electrode 65/75, a drain electrode 66/76 and a data pad 64/74.

7. Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al. ("Kim") US PG-Pub 2003/0085404.

Kim discloses (see fig. 2 and pars. 0043 and 0047) a liquid crystal display device, wherein source, drain and gate conductive lines are indirect contact with a transparent electrode,

each of the conductive lines comprising a first metal layer including an aluminum-alloy (as in claim 2) formed from a first metal; and an alloy layer formed from an alloy of the first metal and another metal including molybdenum (as in claim 5) being disposed at an upper portion of the first metal layer.

As for claim 4, Kim discloses an alloy layer formed from an alloy including a first metal and a second metal deposited onto the first metal layer.

As to the subsequent removal of the second metal, it refers to a process and "product by process" claims are directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685 and In re Thorpe, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the claims are directed to a device. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

As for claim 3, the specification contains no disclosure of either the critical nature of the claimed arrangement or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

As for claim 6, Kim discloses said gate conductive line including one of a gate pad 24, gate line 22 and a gate electrode 26.

As for claim 7, Kim discloses said source and drain conductive lines including one of a data line 62, a source electrode 65, a drain electrode 66 and a data pad 64.

layer.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

8. Claims 15-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Jeong et al. ("Jeong") USPN 6,081,308.

Jeong discloses in figs. 11-25 a liquid crystal display device, comprising: a substrate; a gate electrode 210 disposed on the substrate; a gate pad 220 disposed on the substrate; an insulating film 26/300 disposed on the gate electrode and the gate pad; an active layer 28/ 400 disposed on the insulating film above the gate electrode; an ohmic contact layer 30/510/520 disposed on portions of the active layer; a source electrode 32a/610 and a drain electrode 32b/620 disposed on the ohmic contact layer; a passivation layer 34/700 disposed on the source and drain electrodes or disposed on the insulating layer (as in claim 19), covering side surfaces of the source and drain electrodes (as in claim 18) or contacting a portion of the active layer between the source and drain electrodes (as in claim 20); a pixel electrode 36/800 disposed on the passivation layer and contacting the drain electrode; and a transparent electrode material 36a/810 disposed on the passivation layer or disposed within a via formed through the passivation layer and insulating film (as in claim 17) contacting the gate pad or a second layer of the gate pad (as in claim 16), wherein the gate electrode and the gate pad both include a first layer formed of a first metal 24/221 and a second layer 26/222 formed of an alloy of the first metal and a second metal disposed at an entire upper surface of the first layer directly contacting the transparent electrode.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. You et al. USPN 6,518,630 disclose a TFT array with a multiple-layered structure date wire having a metallic layer and an intermetallic compound layer.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANS
June 4, 2004

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